

Accordingly, what is claimed is:

1. A fiber optic cable, comprising:  
optical fibers disposed in buffer tubes, said buffer tubes  
defining at least two layers generally stranded about a  
center area of the cable; said buffer tube layers defining a  
relatively inner layer of buffer tubes being closer to said  
center area, and an outer layer of buffer tubes being  
relatively further from said center area, said inner and  
outer buffer tube layers each comprising a respective helix  
value, said respective helix values being substantially the  
same.
2. The fiber optic cable of claim 1, differing buffer tube  
diameters with the same wall thickness and lay lengths being  
used in each layer to provide the minimum helix value for  
each layer, the helix value being within about 0% to about 5%  
of each other.
3. The fiber optic cable of claim 1, said buffer tubes having  
inner or outer diameters that vary from tube layer to tube  
layer.
4. The fiber optic cable of claim 1, said buffer tube layers  
having relatively smaller buffer tube wall inner or outer  
diameters occupying the inner tube layer.

Value for  
inner layer

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5. A fiber optic cable system, comprising:  
first and second fiber optic cables, each of said first and second fiber optic cables having respective optical fibers disposed in buffer tubes, said buffer tubes defining at least  
5 two layers respectively in said cables generally stranded about a center area of the respective fiber optic cables; said buffer tube layers defining a relatively inner layer of buffer tubes being closer to said center area, and an outer  
10 center area, said inner and outer buffer tube layers each comprising a respective helix value, said respective helix values within each said cable being substantially the same; and the layer of buffer tubes of said first optical fiber cable being optically connected to a corresponding layer of  
15 buffer tubes of said second fiber optic cable.
6. The fiber optic cable system of claim 5, said optically interconnected optical fibers being selected from the inner layer of buffer tubes of one cable and the outer layer of  
20 buffer tubes of the other cable.
7. The fiber optic cable system of claim 5, at least some of said optically interconnected optical fibers having essentially the same overall fiber length through said cables.
8. A fiber optic cable system, comprising: one or more  
25 concatenated cables with at least one cable section having multiple layers of buffer tubes, at least some of the concatenated fibers in the system having essentially the same overall fiber length.

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9) A fiber optic cable, comprising:

optical fibers disposed in buffer tubes, said buffer tubes defining at least two layers generally stranded about a center area of the cable; said buffer tube layers defining a relatively inner layer of buffer tubes being closer to said center area, and an outer layer of buffer tubes being relatively further from said center area, said inner and outer buffer tube layers each comprising a respective helix value, said respective helix values being substantially non-equal.

10. A fiber optic cable system, comprising:  
first and second fiber optic cables, each of said first and second fiber optic cables having respective optical fibers disposed in buffer tubes, said buffer tubes defining at least two layers respectively in said cables generally stranded about center areas of the respective fiber optic cables; said buffer tube layers defining a relatively inner layer of buffer tubes being closer to said center area, and an outer layer of buffer tubes being relatively further from said center area, said inner and outer buffer tube layers each comprising a respective helix value, said respective helix values within said first fiber optic cable being substantially non-equal; and the respective helix values in said second fiber optic cable having the respective helix values such that at least some of the optical fibers in the overall fiber optic cable system have concatenated fiber lengths being essentially equal, when layers of buffer tubes of said first optical fiber cable are optically interconnected to a corresponding layer of buffer tubes of said second fiber optic cable.

11. A fiber optic cable system with some or all fibers having essentially the same length, comprising:

- 5 first and second fiber optic cables, each of said first and second fiber optic cables having respective optical fibers disposed in buffer tubes, said buffer tubes defining at least two layers respectively in said cables generally stranded about a center area of the respective fiber optic cables;
- 10 said buffer tube layers defining a relatively inner layer of buffer tubes being closer to said center area, and an outer layer of buffer tubes being relatively further from said center area, said inner and outer buffer tube layers each comprising a respective helix value, said respective helix
- 15 values within each said cable being substantially non-equal; and the layer of buffer tubes of said first optical fiber cable being optically connected to a non-corresponding layer of buffer tubes of said second fiber optic cable.
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